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The Diseases of Sheep on the Romney Marsh*

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RYE

THE ORIGIN OF BRITISH SHEEP

The domestication of sheep commenced as far back in history as the Neolithic period when primitive man was beginning to acquire a little intelligence in farming and animal husbandry. The location of the first of these sheep was somewhere to the east of the Caspian and they are described as "Urials." In those days the domesticated sheep accompanied the human tribes in their wanderings over Europe and evidence of them has been found in the early Swiss Lake Dwellings and in England. There was also a breed of wild sheep inhabiting Europe about that time and it is considered that our earliest domesticated sheep were probably derived in part from the wild European Mouflon and in part from the domesticated Asiatic Urial. As found in Britain they are said to have possessed slender legs and short goat-like horns and these characteristics persisted down to Roman times.

THE ORIGIN OF THE ROMNEY MARSH

The Neolithic period also witnessed the severance of that isthmus of land which joined England to the Continent.

With the formation of the English Channel a continuous amount of shingle, sand and organic matter began to be deposited on the floor of the bay which is now the Romney Marsh. In those days the floor was 70 ft. below the surface of the water and contained portions of the Forest of Andrida which had been sucked down, in preceding centuries, from the coastline. After several thousands of years this continuous deposition gradually rose above sea level at one particular point, at the mouth of the bay. This period coincided with the Roman occupation of England, and as the island increased in size it is said that the Romans built a road out to it from the mainland and it became known as Roman Island. As time went by more islands appeared and a natural shingle barrier formed at the mouth of the bay between Hythe and Romney or Roman Island and eventually the sea became dammed out of that area bounded by the shingle barrier and the Roman road. When there were flood tides the area became a lagoon and then the finishing touches were put to the formation of the Romney Marsh by the creation of the rich alluvial surface.

Early Diseases

Some centuries must have elapsed before sheep grazing on any scale was carried out on the Marsh owing to frequent floodings and difficulties of proper drainage and also the fact that the Ancient Britons were mainly agriculturalists. A certain number of sheep were kept on the mainland and it is highly probable that diseases occurred amongst them if one may judge from the history of other parts of the continent. It is known that the Romans knew a certain amount about diseases of sheep, such as pox and scab, as well as the contagious nature of disease, and also that they practised certain methods for suppressing outbreaks of a contagious nature. This knowledge they had probably acquired from the Greeks and it is feasible to suppose that in any outbreaks occurring in this country during their occupation their experience may have been passed on to the Britons. However, from the time of the Romans until the Norman conquest very little is recorded about sheep, but in the Domesday economy they occupied an important position as producers of milk, cheese and wool, and under "foldsoke" a freeman's sheep had to lie in the lord's fold and manure it. At that time there seems to have been a considerable intercommoning and certain localities held land in common for the flocks of all men of the hundred.

Owing to the influence exercised by the Church over the acquisition of knowledge, records of disease in England up to the 13th to 14th centuries are very scanty and it is related that the shepherd, or villein, relied on foolish and filthy remedies or incantations and held a fatalistic attitude towards sudden illnesses, believing them due to an inexplicable evil. Sheep pox is recorded in England in the 13th century and at that time there was a gradual changing over from arable to pasture in order to improve the flocks, as wool manufacture was becoming a staple industry. The wool was divided into two groups, a better quality from the uplands and a cheaper quality from the lowlands and marshlands, and this latter constituted the bulk of supply. Marshland was always considered bad from the point of view of disease and records from 14th to 16th centuries associated liver flukes and whitesnails with "rot" in sheep in those localities. It was also said that thunder and lightning had a powerful effect on sheep, rendering them motionless and incapable of exertion, so that they often fell into ditches and were drowned. Sheep were said to have an instinct of the approach of bad weather and, to fortify themselves against it, would feed late at night or early in the morning. The drinking of water was considered fatal to sheep. At the commencement of a shoot of grass deaths were very frequent and "numbers were cut off (killed) in consequence of an increased quantity and quality of blood stimulating an irritable constitution and producing an increasing action or velocity of the blood which occasioned inflammation and death." Hence the ancient supposition that cases of sudden death were due to an indefinable richness of the blood and this led to the practice of blood letting.

Romney Marsh Sheep—18th Century.—During the latter part of the 18th century the Romney Marsh sheep—which were said to be large and long wooled and to possess broad feet, long stout limbs, narrow chests, flat sides, great bellies and a hardy constitution—were crossed with the Improved Leicester sheep but not with any great advantage. The shape and points were improved and there was also earlier maturity and an aptitude for fattening, together with a reduction in the size of the animal, but although the fleece had improved in staple, it was reduced in weight. Where there was too much Leicester blood the sheep were not so hardy and did not stand up to the exposed pastures of the Marsh.

Later Diseases—18th to 19th Centuries

A number of people wrote about diseases of sheep on the Romney Marsh during the 18th and 19th centuries, but as their findings were very similar, I will quote mainly from one source, Daniel Price, of Appledore:—

LAMBS

Generally speaking, the majority of illnesses in lambs were said to be secondary to cold and wet situations and/or feeding ewes with bad hay which caused scouring and changes in the milk detrimental to the lambs. The same conditions also appeared to be prime factors in producing illness in adults and in most cases the treatment consisted of bleeding the animal until it fainted and this was said to crush the disorder at once. Bleeding was also resorted to wherever there were severe wounds and bruises.

If a lamb hung its head immediately after birth it was a bad sign and the lamb would probably die. If a lamb frisked about and overheated itself in the hot weather it might get an inflammation of the lungs and die.

A Gall Lamb was one which perished with change of food, *i.e.*, at about 14 days old and beginning to eat grass, especially if after warm showers. *Post-mortem* examination revealed bile in stomach and intestines. The symptoms were mainly a frothing at the mouth and if noticed by the shepherd its throat was cut and the carcase used for food. Loss in lambs at about three weeks of age was up to 25 per cent.

An adopted lamb was not allowed to wear the dead lamb's coat for more than one night and part of a day, otherwise it would die from scouring.

When weakly lambs were put to old ewes the milk was too strong and scoured them to death. The udder not being emptied properly, the milk went stale and turned sour. There was no evidence of the ewe dying in these cases as it states she was fattened off.

Swayback.—A condition resembling this was described in 1825 and the reason for its appearance in the lambs was a weakly state of the ewes in consequence of hard keep and eating very bad hay.

Hoose and Husk.—This was considered due to small worms in the windpipe. The condition was slow in onset and progress and attended with general wasting.

SHEEP

It was proved that sheep needed water in summer and did not thrive if water was deficient or bad—the difference could be discovered by handling. It was also proved that moderately hot weather was congenial to sheep. But what was not proved was whether the violent heat of the sun was more dangerous than continuous wet weather in lowering the tone of the animal.

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Sheep were often seen in market suffering from a discharge from the eyes and nose which was said to be secondary to exposure to wet and on boggy layers of ground during travel in cold windy seasons.

When there were mild winters and kindly springs great losses were experienced both in sheep and lambs: the sheep by being in too high a condition and the lambs by having too much milk.

"*The Blood*" ("Blood—Striking," "Struck" or "Water Braxy").—This was considered simuar in those days to black-quarter in young cattle. There was up to 4 per cent. mortality in sheep in the early spring due to feeding on young shoots of grass and natural clover. The animals would fall dead in a short time unless bled freely and put on to bare pastures and perhaps given Epsom Salts. The symptoms were identical with those of modern "struck." A bad-mouthed sheep was said to be immune. Treatment was never of much value.

Blackquarter (probably a type of "Struck").—This was said to be due to "an excess of blood in the system and secondary to chilling of the skin with consequent congestion of heart and lungs and shivering and depression of the nervous system. When the nervous system had recovered, it restored balance to the circulation, the heart was excited to violent contractions and the blood was forced to the extremities (hence blackquarter), and then bleeding was essential."

"*Rot*" *or* "*Blaine*."—This disease was thought to be hereditary and it would appear when sheep were grazing, if only for one night, on water meadows, especially in warm, sultry and rainy weather. There were often sudden deaths, or a chronic illness associated with a dropsical condition, emaciation, obstinate purging, and finally death. When "rot" produced abscesses in the liver or lungs the animal lingered for some time and at last died from atrophy or consumption. This disease was considered the most fatal of all sheep diseases.

Pneumonia.—Inflammation of the lungs was rated next to "rot" for mortality. It occurred commonly in April when the sun was at times very powerful and the nights and mornings very cold. Of an infectious nature but animals responded if turned into the fresh air and bled.

Illnesses associated with pregnant ewes and lambing time.—A month before lambing it was the duty of the "looker" to go very early in the mornings to examine the ewes, as some were liable to have their eyes plucked out by crows, while others might lose their lives by this neglect. (Possibly by being mislaid.)

If ewes were in *too poor a condition* when pregnancy was terminating they became "megrimy" or "bed-rid" and reeled about, and although they might lamb successfully they were incapable of rearing the offspring. (Possibly pregnancy toxaemia.)

If ewes were in *too high a condition* at lambing and there was the slightest degree of dystocia necessitating interference by the lamber, the sheep would swoon and the genitalia soon became inflamed, mortified, and death of ewe followed. (Possibly gangrene.)

Lambing time continued for about a month and the lamber received two guineas and the lamb skins. The ewes frequently preferred the ditch shore to lamb on, probably from its being bare of grass, but it was a dangerous situation for the lamb which on rising often staggered backwards into the ditch and was drowned. A guide for when to interfere in lambing was when the ewe did not rise when approached. Another was that whenever the lamb's tongue could be seen in the passage it meant that its life was being threatened by pressure. After the ewe was delivered of her lamb the youngster's tail had to be put into the mother's mouth to increase her affection for it. Ewes were not allowed to drink water for several days after lambing especially if they had had a bad time. Failure to observe this rule meant certain death of the animal. Sometimes a ewe would continue straining for a day or two after lambing and this often proved fatal—depending on the degree of injury to the womb, the condition of the animal's body, the nature of the keep or the state of the weather. Ewes which had been kept alive often died when the wind changed (probably a pneumonia complication).

Barrenness.—This varied from 8 to 20 per cent. annually.

Up to the middle of the 19th century the causes of the contagious types of diseases were considered as either *humoral, i.e.,* due to changes in the blood, or *miasmatic, i.e.,* due to the presence of disease-bearing substances in the air, probably from dead animals.

During that century worms were being investigated.

Twentieth Century

The Marsh to-day possesses 60,000 acres of grazing land, the majority of which is called "breeding land," and will support from two to six sheep per acre, whilst in other parts known as "fattening fields," there may be as many as 12 sheep to the acre. These latter fields are usually on a higher profile and associated with good subsoil drainage. It is known that certain areas are deficient in copper and manganese. The grasses on the Marsh are natural perennial rye grass, squirrel tail and wild white clover. The squirrel tail, if kept down, is said to be very fattening. Up to half a million sheep can graze on the land besides numerous herds of cattle.

Lambs are born in April and live on ewe's milk until the end of July, when they are put on to a sweet field (mown meadow) for one to three weeks; they are then taken to the uplands on to stubble or mown meadows which have not had sheep on them and afterwards they are put into a different field each week. They go to the uplands because of shortage of keep on the Marsh and also according to the tradition that the grass is too strong or too heavily infested with worms to start them off and causes losses from bowel troubles. So much so, that the longer they are kept from reaching the uplands the higher the percentage of losses there, *e.g.,* if they are moved in August the loss is about 2 per cent., but if delayed until November, then it is 20 per cent. They return to the Marsh at the end of the following March.

It is stated that if ewes are kept on the Marsh at 1½ to the acre during the winter they do quite well and need no supplementary ration.

The Romney Marsh Sheep is now a different breed from the old Kent type. This latter sheep is still large with long straight wool, barefaced and nearly bareheaded, whereas the acknowledged Romney Marsh sheep is a little smaller, has shorter, slightly curled and oilier wool and its head is often adorned with a tuft of wool on the brow which sometimes extends down each side of the nostrils. It is a combination of Kent, Improved Leicester and Ryeland types and is considered by some to be hardier than its forebears although the consensus of opinion is that the sheep on the Marsh is not strong enough for really bad weather.

During this century research work on some of the diseases of sheep on the Marsh has been carried out by Drs. Montgomerie, Taylor and McEwen, and I will attempt to refresh your memories by giving a brief description of this work in order that later in this paper you may appreciate the extent to which they have influenced the health on the Marsh and the financial aspect of the sheep farming industry.

Dr. Montgomerie

Liver Fluke.—It was reputed that during 1879-81 the sheep population of Great Britain was reduced by 3½ millions as a result of this parasite and in later years, 1920 and 1924, there were also heavy losses at home and abroad.

The outbreak in 1924-25 started Dr. Montgomerie searching for a useful drug to replace, if possible, the expensive and little known Danistol. During that period he proved a brand of liquid extract of male fern B.P. equal in effectiveness to Danistol and cheaper. Neither was lethal to the small immature flukes at the initial dose and so the sheep were dosed again after an interval of three to four weeks.

In 1925 he introduced carbon tetrachloride (pure) for the treatment of this disease. It was found to be very effective—a single dose of 1 c.c. killed all adult and nearly mature flukes which had been in the sheep's body for ten weeks. Moreover, it was very cheap.

Pulpy Kidney in Lambs.—This disease of lambs in North Wales appears identical with that encountered on the Romney Marsh. Dr. Montgomerie considers the primary predisposing conditions are the age of the lamb (three to six weeks old), its markedly forward condition, and the quick growth of spring grass, and that these factors are closely interrelated.

In 1933 he proved the existence of *B. ovitoxicus* (Welchii Type D) in lambs dead from this disease in North Wales and produced an antiserum against it.

Dr. McEwen

"*Struck*" *and* "*Ganger*."—During the years 1928-33 investigations were carried out by Dr. McEwen into the acute diseases of sheep on the Romney Marsh and to quote his words:—

"There are two acute and fatal diseases of sheep on the Marsh caused by anaerobic bacteria; the one, 'struck,' is due to an alimentary infection with a *B. welchii* type organism and the other, gangrene or 'ganger,' results from wound infection, generally with *B. chauvoei.*

"These diseases do not account for all the cases of sudden death on the Marsh, but no other infectious or contagious disease has been found as the cause of acute illness and death.

"The causal organisms of 'struck,' lamb dysentery and pulpy kidney disease are similar but the latter diseases have not been encountered on the Marsh and if cases occur these are considered to be few in number."

A "struck" vaccine was produced at Wye as well as hyper-immune serum for use in cases of gangrene.

Parasitic Gastritis and Enteritis.—In 1935 he published the results of work on the control of parasitic gastritis and enteritis in sheep on the Marsh, stating that:—

"The more serious effects of nematode worm infestations of sheep and lambs grazing on permanent pasture in this country may be prevented by the repeated administration of large doses of a 5 per cent. solution of copper sulphate containing 5 per cent. of a 40 per cent. solution of nicotine sulphate."

DR. TAYLOR

During 1933-34 43 farmers on the Romney Marsh lost £10,341 owing to trichostrongyle infestation in sheep. The deaths were spread over four to five months and the outbreak was associated with a long period of drought.

Dr. Taylor has proved that although infective larvae are destroyed in very dry weather, the eggs in faecal pellets remain infective for many weeks and in the case of trichostrongyles, if the dry weather is followed by the sudden appearance of wet weather, the pastures will then be carrying a large number of infective larvae. Herbage may be regarded as a diluent to the larvae, *i.e.*, much herbage less larvae and *vice versa*, and larvae which climb high into herbage may die within 24 hours in dry weather, but those which remain close to the ground retain their vitality for months; hence close grazing in late summer when the weather has been normal is particularly dangerous, especially as the herbage is then of poor quality and more worms develop in a sheep fed on deficient diet than in those receiving full rations.

When the parasites are sufficiently numerous in the bowel they cause a depression in the normal function of the organs of the host and its growth rate declines until it becomes obvious to the farmer. By then great loss has occurred although there has been no parasitic gastritis; the animal is now a "bad doer." Weaning is a time when parasites have reached a high peak, the herbage is deteriorating and the milk supply is cut off and the borderline of parasitic gastritis is very near.

A relatively strong resistance develops in the host about the time it reaches maturity, after which most of the infective larvae ingested are unable to develop. This resistance may be broken down by malnutrition or heavy infestation. *Where ewes and lambs are grazing together* the ewes, although primarily responsible for infecting the pasture, do a lot of good by eating it off and destroying it and so reducing the amount available to the lambs. If lambs graze alone they have not this protection and are therefore much worse off.

1943

During the past few years I have read in *The Veterinary Record* of certain diseases in sheep in various parts of the country and wondered if it was at all possible that these diseases occurred on the Marsh, despite the fact that it is generally accepted by the farmers there that the only diseases are "struck," worms, "ganger" and occasionally "rot" and "swayback." Having known sheep farmers long enough to appreciate their fatalistic attitude towards occasional deaths and their lack of desire to know the cause, I thought it would be useful to obtain data from them regarding all the illnesses and deaths that occur on the Marsh. To that end I produced a questionnaire and obtained the co-operation of some 25 farmers representing a large area of the Marsh and in normal times approximately 75,000 sheep and lambs. Questions were included on nearly all the known diseases of sheep, but I excluded "louping-ill," "pining" in lambs, and "braxy," because I felt certain they did not occur and I had asked every farmer if he had any experience of them, and the answer was in the negative. Questions about the diseases which are known to occur on the Marsh were included to ascertain whether the farmers were taking advantage of the discoveries of this century, if they were profiting by them, and if not why not, and also to try to discover more about the predisposing causes with an idea in mind that perhaps one

SUMMARY OF QUESTIONNAIRE

Disease	Lambs. Percentage is based on 20,000. Annual Loss = 15 to 20 per cent. Illness	Lambs. Death	Lambs. Remarks	Sheep. Percentage is based on 55,000. Annual Loss = 5 to 20 per cent. (Average = 8 per cent.) Illness	Sheep. Death	Sheep. Remarks
Abortion ..		4·5		4·5		In early pregnancy and follows wet weather, lack of food or too many mangolds. Mainly mechanical.
Aphtha	0·1		In late summer and only in some years. Associated with thistle and stubble irritation. Infectious.			
Black-Udder ..				2·0	0·2	Occurs up to 4 months after lambing. Possibly staphylococcal. Always associated with cold east wind.
"Bladder" ..	0·2	0·2	3–4 days' illness—acute pain and continual straining to micturate. No *post-mortem* examination.			
"Blown" ..	1·0	0·1	Tympany of rumen.	1·0	0·1	This may be a predisposing cause in the condition called "mislaid" and may have no association with uneven ground.
Death at Birth ..		0·5	Due to neglect or injury by the lamber.			
Drowning ..		2·0			1·0 to 3·0	*See Note* (*a*).
Fainting ..				1·0		May occur when ewe in early or late pregnancy and being driven. Recovery after resting.
"Fly"	25·0 to 33·0	0·02		25·0 to 33·0	0·02	*See Note* (*b*).
Foot-Rot ..	2·0			4·0 to 5·0		*See Note* (*d*).
"Ganger" ..	0·3	0·2	Following docking, castration and injuries, especially at dipping.	4·0 to 6·0	2·0 to 6·0	Following injury during lambing or dog bites, or being poked with stick in hot weather.
Joint-Ill.. ..	0·25	0·05	Only in some years and in young lambs. Query association with staphylococcal mastitis in flock.			
Lockjaw ..	0·1	0·1		0·1	0·1	
Malnutrition ..	5·0	2·0	Soon after birth or before weaning.	4·0	0·5 to 2·0	
	15·0	4·0	On Uplands after weaning.			
"Megrim" ..	5·0 to 10·0			5·0 to 10·0		*See Note* (*e*).
"Mislaid" ..				10·0	0·5 to 1·0	*See Note* (*f*).
Mud-Fever ..	1·0		Lameness due to sores at or above one or more coronets.	1·0		Sometimes found in association with foot-rot but much more difficult to cure.
Pneumonia ..	0·5	0·5	Soon after birth.	1·0	1·0	In late winter when resistance is low. Also after lambing or dipping.
"Pothery" ..				0·1	0·01	Mainly in tegs in the spring when return from Uplands.
Pulpy Kidney ..	0·35	0·25	*B. ovitoxicus* at 3–8 weeks, occasionally mortality up to 1·0 per cent.			
"Reed-Out" ..				2·0 to 8·0	0·01	Eversion of cervix just before or after lambing. Due to increased intra-abdominal pressure and "soft" muscles.
Scours	4·0	2·15	5–10 weeks old and due to insufficient milk, drinking bad or salty water, or worm infestation.	1·0		Following ingestion of dip.
"Struck" ..	0·3	0·3	At 5–8 weeks old. No *post-mortem* examination.		5·0 to 8·0	*See Note* (*g*).
Swayback ..	2·5	1·6	The only known preventive is copper sulphate given to the ewe early in pregnancy.			
Wasters ..	0·5 to 1·0	0·5 to 1·0	Common cause is inhalation or ingestion of dip. Also chronic worm infestation.	0·5 to 2·0	0·5 to 2·0	Query Johne's disease, tuberculosis, and sheep which were badly flyblown. *See Note* (*c*).
"Wool-Ball" ..	0·8	0·8	"Brutters" at 3–10 weeks old due to suckling matted wool instead of teats. Death due possibly to starvation.			
Worms (Bowel)	5·0	1·0		2·0	1·0	*See Note* (*h*).
" (Huss)	10·0	3·0				" "
" (Fluke)	0·01	0·01		0·1	0·1	" "
Barrenness ..				5·0 to 15·0		Mainly in tegs because all older sheep proved fertile. Causes are mainly insufficient flushing and impotent ram.

day we could possibly do away with perennial vaccination and worming.

Note (a). *Drowning.*—In the wintertime when the weather has been very wet, the dykes are well filled with water and the banks are slippery, a number of sheep may fall in and remain for a considerable time swimming around, attempting to get out; if rescued they seldom show signs of illness and never lose condition.

In the summertime (May and June) and autumn, when the dykes are less than half full, the sheep get caught in the mud and have great difficulty in extricating themselves, especially if the bank is undermined at or above the water level. The sheep are often found drowned. If rescued in time they will recover but do not thrive.

As a general rule, sheep are only found in the ditches after they have attempted to jump them—often in trying to join others of the flock which have been taken out of the field.

Note (b).—"*The Fly*" or Flyblown.—This condition is commonest during the months of May, June and September.

The incidence on the Marsh may be as high as 33 per cent. in a bad year but even then it is less than on the uplands. It varies with the amount of foliage; the presence of decomposing matter such as dead sheep, or smaller carcases deposited on the banks of the ditches from the town sewers; middens or faecal depositions around pounds; or the close proximity to towns or habitations.

The farmers recognise two types, namely (*a*) "foul" or "black" fly and (*b*) "white" fly—the names apply to the condition found on the sheep and not to the colour of the flies.

(*a*) "Foul fly" occurs in the latter part of May and during June when the weather is hot and moist; in sheep of either sex, any breed and age; usually commencing in a soiled area on top of the tail and spreading down each side of it and down the hind legs. Other parts of the body become affected if moist and dirty or by the spread from the tail region. If the weather is not very hot the sheep may not show much irritation until the condition is advanced.

(*b*) "White fly" occurs in September in hot and foggy weather; in sheep of any breed, sex or age and anywhere on the animal except the tail and *not* where the wool is dirty. The eggs and larvae are similar to those of (*a*), *i.e.* creamy white in colour, and in the early stages are difficult to locate. The animal is usually noticed twisting and rubbing its body.

The illness associated with a badly affected sheep usually lasts a month after the skin has been freed from maggots. There is a poor appetite and a failure to thrive. If ewes are affected badly the milk yield drops and the lamb falls off in condition. If lambs get the "fly" badly they suffer much more than adults and the ultimate financial loss to the farmer is about one-quarter of the value. Fatteping may be delayed for twelve months. The coat does not become normal until after the next shearing and then it is often scarred. Sheep which have had the "fly" are always very susceptible to fresh "strikes" every year.

Deaths due to negligence average about 0.02 per cent.

It is possible that a certain percentage of sheep which have been ill with this disease eventually become "wasters."

The annual loss in wool averages approximately 5.0 per cent.

Note (c). *Dipping.*—When animals are handled carelessly during the operation of dipping, their limbs are often found swollen and painful for days after and the general health is impaired, so much so, that they may be the forerunners of the "wasters" found amongst adult sheep. Scour in lambs is often secondary to ingestion of dip.

Note (d). *Foot-Rot.*—On the Marsh the farmers always know when foot-rot is to be expected and they have the following expressions to fit the occasions—"fog—mushrooms—foot-rot" and "more grass—more foot-rot." On some areas of the Marsh young lambs are said to be practically immune to this complaint, but while there is a wide difference of opinion as to the age at which sheep are most resistant it is generally acknowledged that lambs and tegs suffer least and are easiest to cure. Ewes which are heavy in lamb in the early spring are seldom noticed suffering to any great extent and this also applies to very old sheep. The general treatment is a vigorous paring of the hooves and the application of bluestone, lard and Stockholm tar twice a week in bad cases and every month as a normal routine.

A few farmers, who used to have a high percentage of cases on their land, have adopted the very successful method of allowing their sheep and lambs a free range of several adjoining fields in the wintertime, and they never have to pare the hooves or dress them with medicaments. They cannot explain the success of this method. In the summertime they are careful to observe that the animals live only on pastures which are very closely grazed but not overstocked. Most farmers consider that the method of running sheep through a trough containing a copper sulphate solution renders the hoof hard and brittle and is therefore to be deprecated.

Note (e). "*Megrim*" (Megrimy Sheep).—Occurs generally in August when the weather is very dry and hot and there is only salt water to drink. The water in the dykes at this time is very low and often tinted green and very salty.

Any breed, sex or age and usually when in good condition.

Ewes not quite so susceptible.

Symptoms. Several sheep may be affected at the same time. The condition is aggravated if the weather is very hot, and occurs about three weeks after the commencement of hot dry weather. Considered to be a form of seizure and occurs once or twice daily if the animal is not disturbed, and always when disturbed; then the sheep immediately stiffens its legs, body and neck and progresses by jumping "as a whole." Often it lifts its head up and then down and then falls head over heels several times (no circling). The animal seems to lose all sense and sometimes makes for water, and if it reaches a ditch it totters down the bank or jumps into the middle and keeps circling and diving and may drown or smother in mud if not rescued. Mortality only by drowning or smothering in mud. Symptoms last, on and off, possibly for four months with no increase in severity. If it lasts a few months then gradual loss of condition ensues.

Treatment. Put on to pastures with clean water supply or take clean water to them. Recovery in one week.

Note (f). *Mislaid.*—This occurs from two years onward, when the sheep are in good condition or heavy in lamb or very woolly. The animal lies in a depression in the ground and then finds itself unable to get on its feet owing to the voluminous abdomen or the wool getting in its way. Intra-abdominal pressure increases and death may be due to pressure on the heart. It does not normally occur after shearing, but from the beginning of March until the sheep are shorn they are "lookered" twice daily, and should a mislaid sheep be found alive and helped to its feet it staggers about and passes urine and after a short while is normal again.

Note (g). "*Struck.*"—This may be up to 8.0 per cent. generally and on some farms as high as 25 per cent. in bad years.

The disease occurs at any time when fresh grass is shooting up and *too few* sheep are allowed to graze it. It is known that if the number of sheep grazing in a field is increased immediately after one has died from this disease, there will be no more deaths, but if the number is not increased the deaths will multiply. The dangerous stage in fresh grass on certain pastures is when it is between 1 in. and 2 in. in height, and if it is not kept well grazed and below 1 in. then cases of "struck" will occur. This does not appear to be known generally on the Marsh but where it is practised on recognised "struck" land the incidence of the disease is greatly reduced. It is the practice on the Marsh to have the maximum number of sheep per acre grazing the pasture as the spring grass is shooting up, but as that number is insufficient to keep the grass from reaching the dangerous height and the quality and the quantity of the grass is such as will support a greater number per acre, this latter practice should be resorted to in those fields noted for "struck."

A number of farmers vaccinate against this disease and are highly satisfied with the results, but the bulk of the farmers consider the average incidence on their farms too small to merit the expense and effort.

Note (h). *Worms* (Fluke).—This occurs in lambs from six months of age after a very wet summer or grazing on wet, badly drained land. The incidence is small on the Marsh proper but it is often found on the areas sloping from the uplands where in the old days the losses were very high. Those parts of the Marsh which are occasionally flooded with salt water or are close to the sea and receive depositions of salt from sea vapour are considered free from this complaint. Preventive treatment consists of an annual dosing with carbon tetrachloride, Danistol, or fluke and worm capsules, and curative treatment is applied every month during an outbreak.

(Husk).—Symptoms are obvious as early as three months of age but commonly between six and ten months. The predisposing causes are overstocking and/or too strong pasture. In order to avoid the condition farmers advocate a combination of early and repeated worming with Wye drench, fresh uncontaminated pastures, young grass and frequent changes, good dry food, and intratracheal injections at three months of age. Incidence may be as high as 15 per cent. A lamb suffering from husk will lose weight, and its growth will be retarded but its fertility remains intact and if it recovers from an attack will thrive well.

(Bowel).—Predisposing causes are undernourishment when very young and overstocking at later ages. Preventive measures include plenty of milk when young, anthelmintic treatment as early as ten days old and then every month until the lambs leave the Marsh for the uplands when they should be placed in a fresh field every week and not overstocked; as the keep gets scarce additional food in the form of roots and dry concentrated food should be given. The worming should be continued if possible. Some farmers believe it best to graze sheep and lambs together. Curative treatment is mainly by means of the Wye drench but this may be too searching in some cases where there has been an overdosing or too much repetition, and scouring results. Phenothiazine is gaining in popularity but it is too early to assess its true worth to the sheep on the Marsh as the shepherds are still learning to estimate the optimum doses.

It is practically impossible to give a percentage for the number of lambs infested with bowel parasites but I think it can be taken for granted that should they be born free from them they soon become contaminated after birth and the degree of infestation will depend on the general condition of the lamb, for it is an accepted fact that undernourished lambs on the Marsh are more liable to suffer from infestation.

CONCLUSIONS

It is generally acknowledged that a sheep farmer loses a complete flock from disease within 20 years and that losses from "struck" may be valued at half the rent in some fields.

The chief losses in lambs are due to the neglect or ignorance of the keepers who, during the wintertime, allow overstocking and the grazing of lambs on stale pastures for long periods. The

animals will starve in preference to eating old and inferior grasses. The lambs thrive best with a free rein on fresh land where sheep have not grazed during the previous summer. *Losses are less than in the past*, but the farmers are not too certain what kills some of their lambs and I think the situation would bear investigation.

Insufficient care and attention is given to the pregnant ewes during the wintertime.

Mortality reaches its highest peaks between February and April, when there has been a period of overstocking and undernourishment, and again when the fresh grass appears, due to an understocking. The solution to this is obvious but unfortunately not very simple.

To decrease the number of sheep during the winter it is essential that there should be a higher percentage of twin pregnancies and a reduction in the number of barreners, and in my opinion this could be made possible by flushing the ewes correctly at tupping time and increasing the number of rams so that all the ewes which have been flushed will be properly mated. It is well known that one ram in a flock of 40 ewes is often grossly overworked on certain days and a percentage of the ewes do not conceive as a result, but return one, two or three weeks later, often insufficiently flushed, and the result, instead of possibly twins, is a single or even a barrener. The introduction of an extra ram—one which had not been used elsewhere that day—would, I believe, solve the problem. At the moment the number of twin pregnancies on the Marsh is approximately 20 per cent.

To increase the number of sheep at the flush of spring grass means buying in fresh ones when the price is high. Once the flush has died down the pastures become overstocked and to find a level the farmer would have to sell good sheep at a wrong time for their true market value. As it is only in certain fields that the grass must be kept closely grazed to avoid "struck" it follows that the number of sheep to be added above the maximum per acre need not be very many, and if by this addition the incidence of the disease is reduced then the financial loss from fluctuating market values will be less. I believe, however, that by the application of a little thought the farmer could solve this problem of grazing without having to buy in any fresh sheep.

The losses in sheep are tending to decrease and the reasons given are:—

1. Use of the nicotine and copper sulphate worm drench.
2. Liver fluke preventive measures.
3. Avoidance of overstocking in some areas.
4. Supplementing of diet in winter.
5. "Struck," gangrene and pulpy kidney inoculations—the value of these, however, is still not appreciated by most of the farmers.

Before I close, I would like to quote once again from Daniel Price with regard to prevention of diseases. He says, "Take particular notice what number of sheep the ground is adequate to feed properly, stock it accordingly, and pasture the young and old of the flocks all together. By this plan the sickness or braxy is almost totally eradicated, for the young of the flock follow after and share the experience of those that are old, both with respect to what food is proper for every season of the year and time of the day and gain most by feeding along with them for some hours every seasonable night when they would otherwise have been lying fasting, and so hungry next morning that they are apt to wrong their stomachs by eating too freely of anything that comes in their way. By this rising in the night, too, they are enticed both to pass urine and dung by which the water braxy is totally prevented from attacking them and a stumbling block laid in the way of others. By this plan also the ground is much more equally stocked and every corner of it more equally eaten. No straggler will wander from the farm and the sheep feed ten times easier and neither waste themselves nor the ground by being driven to and fro."

Acknowledgments.—I wish to express my indebtedness for the help given by Professor Wilfrid Jackson, Mr. C. J. Gilbert, F.G.S., Mr. H. C. Darby, Drs. Montgomerie, Taylor and McEwen and the numerous farmers of the Romney Marsh.

We are requested by one of the firms concerned to make reference to the postal and transport delays likely to be experienced between now and Christmas. If veterinary surgeons will bear in mind the possibility of delay in the transmission of the original order and in the transport of the preparations themselves (and make due allowance for them), disappointment and inconvenience may both be avoided.

* * * * *

At a meeting of the Agriculture Group of the Society of Chemical Industry to be held on Tuesday, December 14th, 1943, at 4 p.m., in the rooms of the Chemical Society, Burlington House, Piccadilly, W.1, a paper on "Livestock Deficiency Diseases and their Treatment" will be presented by Dr. S. J. Watson, Director of Research, Jealotts Hill Research Station.

THE VETERINARY RECORD
December 11th, 1943

WORLD NUTRITION

DURING the last war, the genius of a President of the United States of America gave form to a League of Nations whose prime objective was resistance to military aggression. The League contributed much to the welfare of humanity but failed in its major purpose. Another President of the same country has now initiated a movement wider in its scope and deeper in its intent, for it is not only concerned to bring harmony between man and man but between man and nature which sustains him.

Forty-four nations sent delegates to Hot Springs, Virginia, in response to the invitation to consider "the goal of freedom from want in relation to food and agriculture." The results of their deliberations have, potentially, more significance for mankind than have any of the great historical declarations. The formal resolutions open on a ringing note: "This Conference, meeting in the midst of the greatest war ever waged, and in full confidence of victory . . ." But war, with its waste and misery, is not the theme. Even the present conflict is treated as an incident in time, one which will pass while there remains the constant struggle for existence upon the earth.

"There has never been enough food in the world for the people of the world to eat." Malnutrition and undernutrition we have recognised, but always with the thought that it is in the midst of plenty, capable of adjustment from what is available. It is a stark truth that all the efforts of labour and science to wrest a living from the soil and the sea do not produce enough for all. Add the complicating factors of political and trading systems, transport, dietary habits, religious restraint and so on, and the problem faced by the Conference is seen in its magnitude—"freedom from fear and freedom from want," not for one nation or race but for all mankind.

War has so depleted production that, for a period, it will be necessary to provide foods which will satisfy hunger. Only afterwards will it be possible to aspire to real fortification of peoples against disease and to the positive policy of promoting and maintaining full health. The Conference affirmed repeatedly that the Governments represented must act both individually, responsible to their own people, and in concert with each other. Measures to implement this "Good Neighbour" policy of world stature, sketched in broad outline, cover all the material circumstances of life.

"Nutrition links up on the one hand with public health, on the other with agriculture." The contribution which the profession can make to both is well known in the profession, not so well known to others. We must surely see to it that we do our utmost to make this contribution effective. In the Empire there lie huge tracts of country which are not and cannot be productive until veterinary science has made it safer for backward pastoral races to penetrate with their flocks and herds. It is not possible to foresee in what manner the recommendations of the United Nations Conference will be received by the several Governments, nor what degree of collective action will become effective. But the report places in clear perspective both the need and the power of Britain to aid her own peoples and the world.

Realists will point to past failures of great undertakings and to the frailty of human nature. Idealists will give thanks that men from the four corners of the earth have had the vision and the courage to perform such an act of faith

as is contained in the proceedings of the Conference. How best to steer a wise course between a cynical realism and an airy idealism will be a task that will weigh heavily on our statesmen. But to face the urgent duties that lie ahead, every individual and every group, whether constituted as a profession or not, will need to keep itself in good heart, willing and able to help in whatsoever way it may. And our own profession, confident in its past, will need to be ready to assimilate quickly whatever is dictated to it by fast-changing events, so that it may respond with ever greater alacrity and effect to seize the opportunities that will be surely presented for increased service to mankind in the Empire and the world at large.

* * * * *

COMPARATIVE MEDICINE

IN his presidential address to the Section of Comparative Medicine of the Royal Society of Medicine delivered on October 20th, Dr. Edwards reviewed with a wealth of illustration the vicissitudes which have attended the use of the comparative method since earliest times and noted the valuable advances in knowledge which have accrued where it has been applied with critical regard both as to its advantages and also its limitations. Subject to these considerations there can be no doubt that there is ample scope for its use in many fields outside those in which it has been mainly exploited hitherto. The programme of the Section for the current year is designed to consider what light can be thrown on the problems of medicine by the comparative method of study of such diverse subjects as Animal Ecology and Genetics, Nutrition and Endocrinology, Neuro-pathology and Psychiatry and Comparative Psychology and Animal Behaviour. The discussions should prove to be both stimulating and instructive.

FUTURE OF THE UNIVERSITIES

Sir Ernest Simon, presiding at a recent meeting of the Court of Manchester University, welcomed the appointment of a graduate of Manchester University as Minister of Reconstruction, and appealed to Lord Woolton and those associated with him to give early consideration to the problem of university development after the war and to strengthen the University Grants Committee so as to make it able to deal effectively with all the problems involved.

At the last meeting of the court he suggested, largely on the basis of American experience, that it would be necessary to treble the university grant after the war; basing this conclusion largely on the need for more research and teaching in the sciences. During the last six months public interest in the matter had become exceedingly active and a number of important reports had been issued. There had been much correspondence on the subject in *The Times*, and an impressive leading article summing up the various reports and pressing for a big national development in research. The present outburst of activity was most encouraging, and he could not help feeling confident that after the war there would be a really substantial increase in the funds available for university development. Sir Ernest suggested that there was need of a national planning body to guide and advise university development.

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WEEKLY WISDOM

Many of them [the techniques] are very ingenious and were only discovered after wisely conceived attempts to overcome practical difficulties. This overcoming of obstacles is a pleasant experience. It calls for actual work and experiment and appeals to many of our best minds. The techniques may be regarded as keys by which scientific treasure can be unlocked. Unused they are worthless.—Microscopic Technique in Biology and Medicine—Cowdry (1943).

CLINICAL COMMUNICATION

Extra-Uterine Pregnancy in the Bitch

W. L. GASCOYNE, M.R.C.V.S.
R. H. GOOCH, M.R.C.V.S.
L. A. GOOCH, M.R.C.V.S.
LUTTERWORTH, LEICESTERSHIRE

Subject.—Five-year-old mongrel bitch.

History.—The bitch had had two litters of three puppies each. According to the owner, she noticed a lump in the bitch's abdomen some time before the last litter was born in July, 1942. The bitch came into season in December, 1942, and in July, 1943, and was not mated.

Symptoms.—When seen on September 27th, the bitch had been ailing two days. There was a copious bloody discharge from the vagina, which first appeared two weeks before. The temperature was 104·5° F., and the bitch would neither eat nor drink. On palpation of the abdomen a large hard mass was felt.

Diagnosis.—Mummified foetuses and metritis.

The owner wished the bitch to be saved if possible and an operation was performed the same night. Under chloroform and ether anaesthesia a mid-line incision, about four inches long, was made. On opening the abdominal cavity the mass could be felt in the forepart of the abdomen. So enormous was it, that the incision had to be increased. The mass was withdrawn from the abdomen with the greatest difficulty owing to its size; it was removed together with the two horns of the uterus, which were amputated at the cervix. The ovaries were left *in situ*.

On examination, we found the two horns of the uterus both in a definite state of pyometra, and attached to the end of the left horn was a large mass, approximately round, over which ran the ovarian ligament. It was supplied by the uterine and ovarian blood vessels, which were greatly engorged, and it had had no attachment whatever to the peritoneum. The mass was composed of a mixture of hair and fibrous tissue with some creamy fluid, all enclosed in a definite membrane. The whole thing weighed 3 lb. 12 oz. and its circumference was 16½ inches. Unfortunately the bitch only survived 36 hours.

Conclusion.—The only conclusion we could draw was that conception had taken place in the Fallopian tube at the first mating, and the foetuses had mummified. After the last season pyometra had developed and this had caused the symptoms of illness.

How the bitch survived so long we cannot understand, as the mass was approximately a seventh part of her total weight and occupied quite half of the abdominal cavity.

"It would not do any harm if there were a spring clean of all the cowsheds more than once a year," said Alderman T. W. Atkinson, Chairman of the Public Health Committee, when reporting to Kesteven County Council that of 77 bacteriological samples taken from designated producers 44 had failed to pass the test.

MEMOIRS

Geoffrey Herbert Livesey

It is not easy for a contemporary biographer to allot the rightful place in the history of his profession to Geoffrey Herbert Livesey. Like many veterinarians who have striven with single-minded purpose for the advancement of his profession, he found himself at various stages in his career out of step with many of his colleagues. He usually continued his way, however, and had the satisfaction of knowing in his later years that his earlier decisions had more often than not sown the seed for more slowly developing changes of professional opinion.

Born in 1874 of reasonably well-to-do Liverpool stock, he received a broad education privately at home and at Lausanne, and subsequently at Shrewsbury, his scholastic studies being reinforced by travels to Portugal, Morocco, Egypt, Syria, Turkey and Russia. In 1891 he secured a commission in the 1st V.B. the King's (Liverpool) Regiment and soon after decided he would like to make the Army his career. Owing to age he could only secure a regular commission through the A.V.C. and he therefore embarked upon a veterinary course at Edinburgh in 1895, only to find that after graduation he was unable to get into the Army Veterinary Corps, and so went into practice in Worcestershire. In 1908 he removed to Hove, where he specialised in canine and feline practice, until he retired to London in 1924 so that he might devote more time to the work of the National Veterinary Medical Association, of which he had recently been appointed Secretary and Editor. He married in 1903, but his wife predeceased him in 1936. He is survived by one son, who is in the Mercantile Marine.

Livesey was not one who could devote his energies solely to furthering his own practice; he felt keenly that there was equally important work to be done on behalf of the profession both through its own organisations and indirectly by the activities of its members in other spheres. He always strove to improve the use of leisure and early in his professional life he founded the Stourport Working Men's Club and became captain of the renowned Stourport Boat Club. He also participated in local politics, particularly in support of his uncle, Alfred Baldwin, M.P. This active interest in local politics again manifested itself after his retirement to Blackheath, where he was for many years Chairman of the S.E. Greenwich Conservative Association. Another activity for which he found time was to be a Liveryman of the Worshipful Company of Farriers and thereby to be a Freeman of the City of London.

At the graduation ceremony in London during the year Livesey was President of the R.C.V.S. he impressed upon the newly qualified graduates the necessity of having a hobby apart from their professional work, no matter how devoted they might be to the latter. This precept he fully carried out himself, for he was passionately fond of music, particularly opera and ballet. Indeed he was closely associated throughout her life with the late Lilian Bayliss and was for many years Chairman of the Vic-Wells Association, and Vice-Chairman at the time of his death. He was a keen and valued critic of opera—his well-known ability for seeing two sides to any question gave added weight to any views he might finally express. He had a good selection of gramophone records and delighted his intimate friends with "recitals" upon one of the most beautifully toned gramophones in London, despite the fact that his house was twice hit during the London air raids.

But Livesey's main interest in life was to assist professional progress. He held the presidency of the Southern Counties Veterinary Society from 1913 to 1921 and in 1922 he was elected President of the Central Veterinary Society. In 1923 he was appointed General Secretary and Editor of the N.V.M.A. and soon after moved to London. He entered energetically into his new duties, attended divisional meetings and introduced a strong breath of individualism into *The Veterinary Record*. This led to conflict with the small Editorial Committee, who decreed that they must have the responsibility for editorials. Livesey held that as Editor the responsibility was his, and he finally vacated executive office with the "National." It is interesting to note that a year or so later a similar case of editorial responsibility was taken to court, when the court decided that the position similar to that taken up by Livesey was correct. Not only did the "National" lose an active executive officer through this unfortunate occurrence, but the business of *The Veterinary Record* has ever since been run on the somewhat cumbersome plan of a large Editorial Committee assisted by "an Editorial Representative."

Fortunately Livesey had been elected to the Council, R.C.V.S., in 1922, and he henceforth devoted his energies wholeheartedly to the welfare of this body. He served at various times on almost all the standing committees; he was Chairman of the Library Committee in 1928, Vice-Chairman of the Examination Committee in 1934 and its Chairman in 1936. In 1938 he was elected to the supreme office of the profession and became President of the R.C.V.S. He has probably attended meetings of the Council and Committees more regularly than any other member, and had hoped to attend his 1,000th meeting during 1944. He was a keen supporter of "The Cambridge Scheme" for getting veterinary education started at Cambridge and although speaking strongly against the first report of the Loveday Committee at the time of its appearance, was known to have very materially altered his views on the future of veterinary education during the last few years. Another action he took during his year of office gave rise to much resentment, but although the announcement of a "*modus operandi*" between the profession and the P.D.S.A. may have been made too precipitately, a growing proportion of the profession now approves a step which broke the unfortunate historical separation of the society from the profession and see in it possibilities for considerable future improvement. Again Livesey with his eyes on the future was one of the strongest supporters of the proposed R.C.V.S. Bill to bring an end to the growth of unqualified practice, and even at the time of his death was striving to find a way to make the Bill acceptable to the profession. The same desire to promote goodwill among all those serving the interests of animals and to advance the growing appreciation of the true position of the profession persuaded him to accept the chairmanship of N.A.R.P.A.C. at the time of its reorganisation, and much of its quiet, steady progress since then has sprung from his unfailing, sympathetic guidance.

But Livesey's greatest interest, because he realised the progress of the profession was inevitably founded upon it, was veterinary education. He threw himself energetically into the work of the R.C.V.S. Examination Committee, and was for many years the Council's representative at many of its examinations, his distinctive figure offering for some one of the pleasurable aspects of that trying period. Many contacts made at this time were continued by Livesey through many subsequent years. On Council he was always ready to consider educational questions anew, particularly

if fresh facts were brought forward; indeed his mind was always going forward and appreciating the need for further change if veterinary education was to remain at a high level. He represented the R.C.V.S. as a Governor of the Royal Veterinary College and on the Parliamentary and Scientific Committee. He was one of the founders of the Veterinary Educational Trust, a venture which he wholeheartedly supported as one promising great good for the future of the profession. Indeed he is the first person to show his abiding faith by bequest to the Trust of his estate, subject to certain life contingencies.

Thus although Livesey was one of the senior figures of the profession he remained one of our more progressive thinkers. This quality may be attributed in no small measure to his never-failing interest in the youth of the profession, more especially the students. This interest was strengthened by real sympathy and understanding, which he gladly extended in private to many members of the profession who had fallen upon unhappy days or to those whose enthusiasm for their profession sometimes brought in its train little but intolerant and thoughtless criticism. He will certainly be missed by very many as a guide of understanding and experience and a friend of deep and genuine sympathy. W. R. W.

The Funeral

Mr. Livesey was laid to rest in Charlton Cemetery, near Blackheath, on Monday last. Principal J. B. Buxton, Mr. A. Spicer and Dr. Fred Bullock represented the Royal College of Veterinary Surgeons, Dr. W. R. Wooldridge was present on behalf of the National Veterinary Medical Association and the Veterinary Educational Trust, and Dr. A. W. Stableforth represented *The Veterinary Record*. The Central Veterinary Society was represented by Mr. F. E. Somer, Major J. M. Smith represented the National A.R.P. for Animals Committee and Mr. Bridges Webb the People's Dispensary for Sick Animals. The Sadler's Wells Theatre was also represented. The family mourners included Dr. and Mrs. Bickerton, with Mr. Thatcher.

Mr. Livesey expressed the wish that small donations to the Veterinary Educational Trust, in which he had so deep an interest, should take the place of floral tributes to his memory.

Major-General W. S. Anthony, C.B., C.M.G.

As we recorded with great regret in our issue of November 27th, the death of General Anthony occurred at Ascot on November 15th after a protracted illness borne with the greatest fortitude.

William Samuel Anthony, the son of John Anthony, of Kidwelly, South Wales, was born on January 3rd, 1874, and was the eldest of five famous brothers. He qualified M.R.C.V.S. at the Royal Veterinary College, London, on May 15th, 1895, and was gazetted Veterinary Lieutenant on October 14th, 1896. He was quickly sent on foreign service, embarking for India on January 25th following, where he immediately saw active service on the North West frontier and was granted the Indian Frontier Medal with clasp. He served continuously in India until April, 1903, when he was invalided home.

He returned to duty in December, having been promoted Captain the previous October. Six years' home service followed, much of it on the Curragh, and in early 1910 he proceeded on duty to South Africa *en route* to India. He was promoted Major in October, 1911.

The outbreak of the Great War found him serving at Poona and he was immediately appointed A.D.V.S. of the 6th (Poona) Indian Division and proceeded with them to Mesopotamia in November of that year. He became D.D.V.S. of the Indian Expeditionary Force "D" in April, 1915, and Director in May, 1916. He was promoted Brevet Lieutenant-Colonel on June 3rd, 1916. In May of the following year he was invalided to India, where he was posted to the Army Veterinary School, Poona, but his health did not improve and he was transferred to England in the winter of 1917. After a period of 18 months spent in the Eastern Command and as D.D.V.S., Aldershot Command, he became A.D.V.S., Irish Command, and served in that capacity during the two following unhappy years. March, 1921, again found him under orders for India. In August, 1925, he was promoted Colonel and transferred home, assuming duty again as D.D.V.S., Aldershot Command, in December, 1925. He continued in that capacity until August, 1929, when he was placed on half pay.

On December 1st of that year he was promoted Major-General and appointed as Director General Army Veterinary Services at the War Office, a position he held for the full period of four years, retiring on retired pay on December 1st, 1933.

Honours awarded to General Anthony included the C.M.G. (1919) and C.B. (1930) and as a mark of very special esteem General Anthony was, on May 24th, 1934, appointed Colonel Commandant of the Royal Army Veterinary Corps in succession to Major-General Sir John Moore.

General Anthony was a man of strong principles and would have been an outstanding character in any walk of life. He was known and beloved wherever he went. The horse was always foremost in his thoughts, but his greatest ambition in life, to win the Grand National, remained unfulfilled. He owned many good steeplechasers, the greatest of which was "Clashing Arms." During the last three years, when his health had broken down, the daily visit to his horseboxes was his greatest joy, and he delighted to welcome and entertain old friends at his house near Newbury with reminiscences of equine characters of days gone by.

He was a loyal leader of the Corps and all that pertained to its welfare, and as recently as September 1st insisted on making a journey to London, which was really far beyond his physical powers, to attend committee meetings in connection with the welfare of the personnel of the Corps. Those present marvelled at the courage and spirit of the man who under such obvious physical disability could contribute so much sound common sense blended with his own quaint humour.

General Anthony married in 1919 and leaves a widow, a son and a daughter, to whom we extend our deepest sympathy.

The last rites were performed privately at Golders Green on November 19th, 1943.

The following extract from *The Times* of November 23rd, 1943, is an appreciation from a great soldier, and we are sure that the profession will welcome this tribute to one of its outstanding characters in a period which was rich in great men in the ranks of the profession:—

"The death of William Anthony has caused a real sense of loss to those whom he served so loyally and to whom he gave so much. He added to professional knowledge of a remarkable quality a rare judgment and originality. It was natural that he should reach the highest post in his profession. But it was the other sides of his character which added so much to his attraction. He was deeply read, and added to a profound religious faith a touch of mysticism inherited from his Welsh forbears. Wherever he served he always strove to know the people. He understood and was loved by Irish peasants, and by a strange, almost Kim-like collection of horse dealers, jockeys and vagrants in Baluchistan. His wealth of quaint and original anecdote will be sadly missed."

George Dunlop Martin

In our last issue we recorded with deep regret the death of a greatly valued member of the profession in Capt. George Dunlop Martin, M.R.C.V.S, of Windyside, Mill Hill, Shenfield, Essex, which took place on Saturday, November 27th, after an attack of influenza from which pneumonia developed.

Capt. Dunlop Martin, who was 74 years of age, was known as a skilful practitioner, particularly amongst small animals, not only in Brentwood and district, but throughout Essex. Qualifying at the London College in 1891, he commenced practice in Maldon, later proceeding to Witham, where he practised for ten years. During the early part of his life he studied to become a doctor—in fact he almost completed his training at Guy's—but eventually he took an appointment on the staff of the Imperial Bacteriological Research Institute at Muktesar, India. Resigning for reasons of health, he returned to England and practice in 1908. During the last war he saw service with the R.A.V.C. both in France and at the Dardanelles, and in the present war he formed the Shenfield platoon for the Home Guard.

Capt. Dunlop Martin practised successfully in Shenfield since he went there in 1930. One of his great interests was the training of dogs for the blind—an enthusiasm which was reflected in his last wish, that gifts towards the funds of the society concerned should replace floral tributes.

As already has been recorded, he was an enthusiastic member of the Central Veterinary Society, and the esteem in which he was held by the fellows is shown by his selection as the recipient of one of the two "Victory" medals the Society had arranged to bestow during the coming year. He represented the Central Division on the Council of the N.V.M.A., and it is a sad coincidence that one of the proposals now under consideration by the Divisions, namely, the change in the name of the parent body, should have been put forward by him. The circumstance well illustrates the progressiveness of thought and action which characterised his life and more particularly the practice of his profession. His clinical flair was widely recognised, and a source of much gratification not only to Capt. Dunlop Martin himself but to his colleagues was his election in 1941 to the presidency of the section of comparative medicine of the Royal Society of Medicine.

There was a large assembly at the funeral service on Thursday of last week at Shenfield Parish Church, when the following members of the profession attended: Mr. H. E. Bywater (representing the National Veterinary Medical Association), Mr. W. F. Barton

(representing the Central Veterinary Society) and Mr. C. W. Abrams.

. . . . .

An Appreciation

Major Hamilton Kirk writes:—

The sudden death of Capt. George Dunlop Martin will have come as a profound shock no less to the general body of veterinarians in this country than to the fellows of the Central Veterinary Society among whom he was so well known and highly esteemed. I had the pleasure of many years of friendship with him, during which years I always regarded him as an observant and able clinician and a skilful surgeon, particularly in small-animal practice. He possessed a charming and tranquil temperament and his gentlemanly, unassuming manner gained for him the admiration of all who knew him. Few realised he was over 70 and none of us who saw him at the recent "Central" meeting could have dreamed his end was so near.

I can recall now the tragic point of the remarks I addressed to the Council of the Central Veterinary Society when it was selecting a recipient of the "Victory" medal. In connection with the centenary celebrations of the Royal College of Veterinary Surgeons it had already been tentatively decided to bestow this honour upon Dr. Fred Bullock. Somehow I felt bound to urge that a departure from usual practice should be made this year in the bestowal of two medals, the second to George Dunlop Martin in recognition of his long years of loyal service to the Society (of which he was a past President) and of his clinical abilities as a veterinary surgeon. The final remark was that those members who were acknowledged to have qualified in every way for honour and who were in the evening of their lives, should have that honour bestowed without a moment's delay and whilst the member was still alive to appreciate it. Dunlop Martin, when selected, was exceedingly appreciative, but alas, poor fellow, has not lived to receive the medal.

I know all readers will feel, as I do, the greatest sympathy for his widow.

QUESTIONS IN PARLIAMENT

Tuberculous Cows

Mr. Price asked the Minister of Agriculture whether he will take steps to control the disposal of cows which have reacted to the tuberculin test, with a view to preventing further infection?

Mr. Hudson: Control on the lines suggested by the hon. Member would, I am afraid, not serve any useful purpose in view of the very much larger number of untested cattle which, if tested, would react. Reaction to the test does not, of course, in itself imply infection in the milk of a reactor.

Mr. Price: Is it not a fact that reactors at present tend to get on to the market and to spread infection, and is that not a matter which the Ministry should take into consideration?

Mr. Hudson: No, Sir, I do not think you can say that it is a fresh infection, because the herds are already severely infected.

. . . . .

Bulls (Licensing)

Mr. R. Morgan asked the Minister of Agriculture whether, as his Department now registers bulls against a registration fee, he will consider recommending to his veterinary surgeons that, when issuing a certificate, they should advise owners regarding the best treatment of these animals?

Mr. Hudson: Bulls are inspected for licence by livestock officers, who are not veterinary surgeons. In suitable cases these officers give general advice to owners on the care and feeding of bulls.

. . . . .

Milk Production (Supervision)

Mr. W. Brown asked the Minister of Health whether he will transfer the supervision of milk production to county councils in England and Wales in the same way as such functions are performed in Scotland by county councils as outlined in paragraph 37 of the White Paper on Milk?

Mr. Willink: No, Sir. I would refer the hon. Member to the Government proposals contained in paragraphs 13 and 14 of the recent White Paper upon Measures to Improve the Quality of the Nation's Milk Supply.

. . . . .

Hill Sheep Subsidy

Mr. Snadden asked the Secretary of State for Scotland whether he is now in a position to announce the scale of payments to be made under the Hill Sheep Subsidy Scheme in respect of the current year?

Mr. Johnston: My right hon. Friend the Minister of Agriculture and Fisheries and I have this matter under examination. I hope to be able to make an announcement at an early date.

Major McCallum: When examining this question will my right hon. Friend bear in mind the further losses sustained by hill sheep farmers owing to the new regulations regarding transport of sheep stocks from the farms to markets?

Mr. Johnston: I can assure my hon. and gallant Friend that all relevant considerations are borne in mind in the discussions which take place between us and the Treasury.

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Dec. 15th.—Meeting of the Section of Comparative Medicine, Royal Society of Medicine, 1, Wimpole Street, W.1, 2 p.m.
Dec. 16th.—N.V.M.A. Committee Meetings.
Dec. 17th.—**Meeting of Council, N.V.M.A.**, in London.
Dec. 22nd.—Meeting of the Ayrshire Division, N.V.M.A., at the Hannah Dairy Research Institute, Ayr, 2 p.m.
Dec. 23rd.—Annual Meeting of the Dumfries and Galloway Division, N.V.M.A., at Dumfries, 12 noon.
Jan. 5th, 1944.—R.C.V.S. Committee Meetings.
Jan. 6th.—**R.C.V.S. Council Meeting.**

* * * * *

PERSONAL

Retirement of Dr. R. G. Linton

Professor of Hygiene and Dietetics, Royal (Dick) Veterinary College

Our readers will be interested to learn that on September 30th of this year Dr. R. G. Linton retired from the Professorship of Hygiene and Dietetics in the Royal (Dick) Veterinary College.

Professor Linton was rather older than the average student of his year, as before entering a veterinary college he had served his apprenticeship at sea and as a fully qualified navigating officer had made a number of voyages.

On qualifying in the second profession of his choice, he was the first assistant appointed to Dr. Bradley in Anatomy.

After a period of practice in Devon, he returned to the Royal (Dick) Veterinary College to take up the duties of the newly created Professorship in Hygiene and Dietetics. Up till the time of his appointment, Hygiene and Dietetics had been taught by any available "bird of passage" and Professor Linton had to undertake the arduous task of building up his department from very small beginnings. This work was hardly well started when Professor Linton, like the majority of his contemporaries, exchanged the academic scene for the military one; fortunately the work he did in the R.A.V.C. had a direct connection with that of his department in the College.

Professor Linton very early placed students in his debt by writing a concise manual on veterinary hygiene, soon known familiarly as "Linton's Hygiene." This was followed by a text-book of animal nutrition. Further editions of these two books were produced.

With the introduction of the D.V.S.M. and D.V.T.M. courses Professor Linton had to enlarge the scope of his teaching to include these post-graduate courses. As anyone who has conducted post-graduate courses well knows, this entailed a considerable amount of work.

Both as a teacher of undergraduate and post-graduate classes Professor Linton attained a high standard.

After many disappointments, Professor Linton saw the erection in the College of a building to house the Department of Hygiene and Dietetics. This building and his two text-books are tangible evidence of his successful achievements in his own sphere of veterinary science.

Professor Linton's activities were not limited to the College; for many years he acted in various capacities for the Ministry of Agriculture and Fisheries in connection with the export of worn-out horses, transit of animals, humane slaughter of animals, etc.

Following the death of Dr. Bradley, Professor Linton was appointed Acting Principal of the Royal (Dick) Veterinary College during the period that elapsed before the appointment of a new Principal. On the appointment of the new Principal, Professor Linton was appointed Vice-Principal, an entirely new appointment hitherto unknown in the history of the College, clearly indicating the opinion of Professor Linton held by the governing body of the College.

(Continued overleaf.)

On the occasion of his retirement Professor Linton was presented by his colleagues with a pair of field glasses, and Mrs. Linton received a solid silver candlestick.

We feel sure all our readers will join us in wishing Professor and Mrs. Linton many happy years in retirement.

* * * * *

Birth.—Edwards.—To Vera, wife of Frank V. Edwards, M.R.C.V.S., Denbigh, on November 28th, 1943, a son, Paul Clwyd.

* * * * *

THE COMPARATIVE METHOD IN MEDICINE

The President of the Section of Comparative Medicine of the Royal Society of Medicine (Dr. J. T. Edwards, M.R.C.V.S.) delivered his presidential address at the Society's house, 1, Wimpole Street, W.1, on Wednesday, October 20th, 1943. He took as his subject "The Limitations and Uses of the Comparative Method in Medicine" and in order to ascertain the advantages to be gained by the comparative method he also considered its limitations. Trypanosomiasis, foot-and-mouth disease, rinderpest, rabies, Texas fever, malaria and influenza were discussed and reviewed to show how research work on one disease and on one species of animal may help in unravelling a problem besetting those working on human diseases. Through a mere accident in history the close collaboration which should always have existed between human medicine and veterinary medicine failed and it was left for men of recent times to redeem this error. Turning to different types of disease the President discussed sterility and milk fever in dairy cattle, swayback in lambs, shivering and whistling in horses, nervous diseases of pigs, and indicated the large field open to workers in the many varied sections of comparative medicine such as animal neurology, ecology, genetics, nutrition and endocrinology. The researches of the comparative psychologist and of those who study the behaviour of animals were also considered. The main theme throughout the address points out that the study of each animal should be made for its own interest and importance and by such means advances will be made.

The address indicates the broad viewpoint of those who planned this year's programme of the Section of Comparative Medicine. The student may well feel with David that "Thou hast set my feet in a large room."

* * * * *

UNITED NATIONS CONFERENCE ON FOOD AND AGRICULTURE

The Conference was convened at Hot Springs, Virginia, U.S.A., on the invitation of President Roosevelt, and met during May and June of this year. Forty-four countries were represented by delegations. Its purpose and scope are reflected in 33 resolutions recorded in the "Final Act" of the Conference. Evidence upon which the resolutions are based is contained in the "Section Reports."

The true significance of the Conference cannot adequately be conveyed in a short note, but extracts from the major resolutions indicate the general nature of the findings and proposals for the eventual solution of a world problem.

> "This Conference, meeting in the midst of the greatest war ever waged, and in full confidence of victory, has considered the world problems of food and agriculture, and declares its belief that the goal of freedom from want of food, suitable and adequate for the health and strength of all peoples, can be achieved.
>
> "The first task is to complete the winning of the war and to deliver millions of people from tyranny and from hunger. During the period of critical shortage in the aftermath of war, freedom from hunger can be achieved only by urgent and concerted efforts to economise consumption, to increase supplies and distribute them to the best advantage.
>
> "Thereafter we must equally concert our efforts to win and maintain freedom from fear and freedom from want. The one cannot be achieved without the other.
>
> "There has never been enough food for the health of all people. This is justified neither by ignorance nor by the harshness of nature. Production of food must be greatly expanded: we now have knowledge of the means by which this can be done. It requires imagination and firm will on the part of each Government and people to make use of that knowledge.
>
> "The first cause of hunger and malnutrition is poverty. It is useless to produce more food unless men and nations provide the markets to absorb it. There must be an expansion of the whole world economy to provide the purchasing power sufficient to maintain an adequate diet for all. With full employment in all countries, enlarged industrial production, the absence of exploitation, an increasing flow of trade within and between countries, an orderly management of domestic and international investment and currencies, and sustained internal and international economic equilibrium, the food which is produced can be made available to all people.
>
> "The primary responsibility lies with each nation for seeing that its own people have the food needed for life and health; steps to this end are for national determination. But each nation can fully achieve its goal only if all work together."

Recommendations

> "That the Governments and authorities here represented recognise and embody in a formal declaration or agreement the obligation to their respective peoples and to one another henceforth to collaborate in raising levels of nutrition and standards of living of their peoples, and to report to one another on the progress achieved:
>
> "That the Governments and authorities here represented establish a permanent organisation in the field of food and agriculture."

The principle of mutual responsibility and collaboration between nations is affirmed repeatedly and there is evident an intention to work together for the common good of mankind, sweeping aside all obstacles to that goal of "freedom from fear and freedom from want."

Recommendations provide for the creation of an Interim Commission to implement the short-term policy imposed by the exigencies of war and for a Permanent Commission whose work will not be limited by present international enmities nor any bar of race, politics or commercial interest.

United Nations Conference on Food and Agriculture.
Final Act.
Miscellaneous. No. 3 (1943) Cmd. 6451. H.M.S.O. 9d. net.
Section Reports.
Miscellaneous. No. 4 (1943) Cmd. 6461. H.M.S.O. 6d. net.

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NUTRITION SOCIETY

Scientific and Medical Aspects of Post-War Nutritional Relief

The 15th scientific meeting (ninth of the English group) of the Society was held on November 6th, 1943, at the London School of Hygiene and Tropical Medicine, with the Rt. Hon. Lord Horder in the chair. There was a very large attendance and papers were read by Professor J. R. Marrack ("Experiences of the last war and since. Current state of nutrition in occupied Europe and elsewhere"), Dr. John Hammond ("Problems of production in relation to post-war nutritional relief"), Dr. Audrey Russell ("Organisation of nutritional relief in the field"), and Miss E. M. M. Hume ("Opportunities for nutritional research in the work of relief").

Dr. John Hammond emphasised that the *first phase of relief* must be based on the minimum requirements necessary to maintain human life and health in all countries before any one country raises the standard of living to optimum requirements such as are envisaged in *the second phase of reconstruction.* The minimum food requirements aimed at are those existing in Great Britain under the present rationing scheme, modified by the pre-war food conditions and habits of the country concerned. Dr. Hammond gave a list of the minimum calorie requirements of different population categories, and stated that the minimum yearly requirements for high-class animal proteins could be supplied by the following:—

Commodity	*Kg. per head per year*
Meat (including bacon and ham)	30
Milk (in terms of whole milk)	76
Cheese	4
Eggs	3
Fish (fresh)	8
Fish (preserved)	2

The means to be taken to supply nutritional relief fell into two sections, *viz.*: (1) production in the country concerned, and (2) imports of food from overseas, and these were discussed in detail. In conclusion, Dr. Hammond said that it was necesary to realise what this programme of Post-War Nutritional Relief in Europe would mean to us directly in this country. So far as British agriculture was concerned, there would be need to continue and if possible still further to increase the high war-time rate of production. Because of the need of cereals for human consumption in Europe and the Far East, imported concentrated animal feeding-stuffs were likely to be in short supply for some years and it would be necessary to continue to depend largely on home-grown feeding-stuffs. With short supply of feeding-stuffs, it would be necessary to use those available most economically, *i.e.*, to produce milk in preference to meat where possible.

Two brilliant contributions to the discussion were made by Surgeon-General K. Evang (Norway), who pointed out that in

last war the shortage of fats was outstanding. There was no factory sign denoting that a deficiently fed person was passing the "dangerous stage." In Norway, in this war, famine oedema was occurring despite the fact that there was no real shortage of animal protein. It must be realised that in the succour of Europe nutritional science must play a subordinate role to such factors as economic warfare and transport facilities. Dr. Aykroyd later stated that at the Hot Springs Conference it had been necessary to contest hotly what the Americans termed the "Santa Claus complex," *i.e.*, the belief that starving Europe could be relieved by the mass importation of food from areas where alleged surpluses existed. This idea was fallacious, since despite what were now termed "local abundances" there was no real food surplus in any country, and the only permanent relief measure would be to facilitate food production in the liberated territories.

Dr. Bicknell (London) suggested that opportunities might arise for evaluating the interrelationship of the vitamins, and Dr. E. Hodicek (Cambridge) said it was desirable, as part of the relief programme, to re-establish the national universities as quickly as possible.

A. N. W.

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SCHEME FOR THE CONTROL OF DISEASES OF DAIRY CATTLE

STATEMENT SHOWING THE NUMBER OF UNDERTAKINGS NOTIFIED TO THE MINISTRY OF AGRICULTURE DURING THE MONTH OF NOVEMBER, 1943

County	Undertakings Notified		Total Undertakings		
	During Month	Previously	Number	Number of Cattle	
				Cows	Heifers
ENGLAND					
ford	1	39	40	914	495
ks	5	91	96	3,367	2,129
ks	2	86	88	2,352	1,732
mbridge	—	16	16	371	159
ester	10	386	396	12,903	4,441
mwall	—	8	8	154	103
mberland ..	2	60	62	1,556	1,379
by	5	291	296	8,658	4,778
on	4	205	209	3,430	1,993
net	—	73	73	2,249	1,152
ham	7	253	260	5,803	2,007
ex	5	244	249	8,750	5,073
ucester ..	3	92	95	2,827	1,540
pshire	6	367	373	10,800	6,749
ford	—	28	28	414	237
rtford	—	69	69	2,186	1,262
ts	1	14	15	530	371
of Ely	—	2	2	26	54
of Wight ..	—	17	17	309	150
t	1	143	144	3,340	1,859
s	4	215	219	6,212	1,856
s	2	84	86	2,330	1,561
s (Holland) ..	—	3	3	25	11
s (Kesteven) ..	—	21	21	208	143
s (Lindsey) ..	1	85	86	1,007	947
dlesex	1	14	15	605	289
folk	6	179	185	5,588	3,770
thants	2	77	79	2,136	1,464
thumberland ..	1	54	55	1,786	870
s	6	134	140	3,293	1,869
ord	—	40	40	1,233	1,079
and	—	9	9	157	109
p	13	253	266	8,153	3,901
of Peterborough	—	1	1	37	31
erset	11	201	212	5,701	2,545
s	4	197	201	5,905	3,113
folk, East ..	1	98	99	2,303	1,677
folk, West ..	2	48	50	1,068	652
rey	5	115	120	3,261	1,450
sex, East ..	6	182	188	4,930	2,744
sex, West ..	3	120	123	3,433	1,957
wick	4	125	129	3,232	1,865
tmorland ..	—	19	19	522	587
s	—	87	87	3,676	1,644
rcester	2	146	148	3,183	1,469
rks, E.R. ..	3	89	92	1,429	780
rks, N.R. ..	2	115	117	2,364	1,452
rks, W.R. ..	6	256	262	6,747	2,561
LES					
glesey	—	40	40	698	530
con	1	6	7	152	79
narvon ..	1	109	110	1,814	935
digan	2	16	18	297	245
marthen ..	6	208	214	3,819	1,967
bigh	—	62	62	1,239	677
.. ..	2	107	109	2,406	1,039
morgan	—	86	86	1,426	515
rioneth	—	10	10	126	63
mouth	1	50	51	1,183	685
tgomery ..	—	17	17	305	217
broke	1	93	94	1,715	1,115
nor	—	—	—	—	—
TOTALS ..	151	6,255	6,406	166,393	88,096

Notes.—(1) Operative periods of undertakings: 1 year, 1,485; 2 years, 517; years, 4,404. (2) Undertakings renewed for a further period: 1 year, 296; 2 years, 75; 3 years, 82. (3) Undertakings not renewed at end of operative period 127. (4) The figures showing the number of undertakings notified during the month relate to entirely fresh undertakings and do not include undertakings renewed for a further period. Undertakings which have been cancelled or not renewed are not included in the figures for previous notifications.

STATEMENT SHOWING THE NUMBER OF UNDERTAKINGS NOTIFIED TO THE MINISTRY OF AGRICULTURE DURING THE MONTH OF NOVEMBER, 1943

County	Undertakings Notified		Total Undertakings		
	During Month	Previously	Number	Number of Cattle	
				Cows	Heifers
SCOTLAND					
Aberdeen	2	20	22	757	183
Angus	1	17	18	619	311
Argyll	—	5	5	91	74
Ayr	—	45	45	1,614	1,270
Banff	2	2	4	112	20
Berwick	—	2	2	53	22
Bute	—	—	—	—	—
Caithness	—	—	—	—	—
Clackmannan ..	—	4	4	132	139
Dumfries	—	15	15	793	628
Dumbarton	—	3	3	105	86
East Lothian ..	—	4	4	152	94
Fife	—	35	35	1,272	641
Inverness	—	9	9	299	189
Kincardine	—	5	5	231	126
Kinross	—	2	2	29	10
Kirkcudbright ..	—	12	12	624	449
Lanark	—	19	19	688	474
Midlothian	—	1	1	44	69
Moray	—	—	—	—	—
Nairn	—	1	1	14	—
Orkney	—	—	—	—	—
Peebles	—	4	4	86	55
Perth	—	33	33	748	426
Renfrew	—	9	9	384	297
Ross-shire	—	4	4	128	72
Roxburgh	—	—	—	—	—
Selkirk	—	—	—	—	—
Stirling	1	26	27	876	624
Sutherland	—	4	4	102	64
West Lothian ..	—	1	1	23	18
Wigtown	1	27	28	1,832	973
Zetland	—	—	—	—	—
TOTALS ..	7	309	316	11,739	7,313

Notes.—(1) Duration of undertakings: 1 year, 52; 2 years, 35; 3 years, 229. (2) Undertakings renewed for a further period (included in column 2 of statement): 1 year, 3 (figures for 2 and 3 years not stated). (3) Undertakings expired and not renewed (not included in column 2 of statement): 43. (4) The figures showing the number of undertakings notified during the month relate to entirely fresh undertakings.

RETURN SHOWING BY COUNTIES THE NUMBER OF VETERINARY SURGEONS PARTICIPATING IN SCHEME AND THE NUMBER OF UNDERTAKINGS COMPLETED UP TO THE END OF NOVEMBER, 1943

County	No. of Veterinary Practices	No. of Undertakings	County	No. of Veterinary Practices	No. of Undertakings
ENGLAND			ENGLAND—*contd.*		
Bedford ..	4	29	Rutland ..	1	8
Berks	10	132	Salop	14	271
Bucks	6	84	Soke of Peterboro'	1	2
Cambridge ..	2	6	Somerset ..	22	246
Cheshire ..	18	412	Staffs	16	280
Cornwall ..	3	9	Suffolk, East ..	6	95
Cumberland ..	8	62	Suffolk, West ..	4	42
Derby	11	177	Surrey ..	18	135
Devon ..	20	209	Sussex, East ..	16	213
Dorset ..	6	74	Sussex, West ..	8	79
Durham ..	10	247	Warwick ..	9	72
Essex	17	247	Westmorland ..	5	14
Gloucester ..	11	70	Wilts	6	84
Hampshire ..	13	306	Worcester ..	6	174
Hereford ..	7	31	Yorks, E.R. ..	6	75
Hertford ..	10	91	Yorks, N.R. ..	10	99
Hunts	2	22	Yorks, W.R. ..	29	291
Isle of Ely ..	—	—			
Isle of Wight ..	2	17	WALES		
Kent	15	130	Anglesey ..	3	31
Lancs	16	243	Brecon ..	1	4
Leics ..	7	81	Caernarvon ..	3	112
Lincs (Holland)	1	1	Cardigan ..	5	46
Lincs (Kesteven)	3	21	Carmarthen ..	8	219
Lincs (Lindsey)	11	91	Denbigh ..	9	80
London ..	2	2	Flint	4	103
Middlesex ..	2	17	Glamorgan ..	6	79
Norfolk ..	13	195	Merioneth ..	2	11
Northants ..	8	78	Monmouth ..	6	56
Northumberland	10	63	Montgomery ..	2	14
Notts	7	176	Pembroke ..	5	71
Oxford ..	4	18	Radnor ..	—	—
			TOTALS ..	481	6,406

Note.—The number of Veterinary Surgeons, 568.

ROYAL ARMY VETERINARY CORPS

The following announcements are made in the issue of *The London Gazette* dated November 16th, 1943: To be Lts.—Frederick Gordon Greer (294623), Ronald William Herbert Pearson (294625), October 1st, 1943; Huw Gwynn Lloyd (294665), October 4th, 1943; John Bertram Abbott (294836), William Guy Buchanan (294811), Robert Hugh Bolton Callum (294837), October 5th, 1943; Kenneth Dalzell (294926), Harold Hugh Frost (294838), Donald MacLeod (297031), October 11th, 1943; Trevor James Morgan (297032), October 16th, 1943.

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LEGAL NOTES

Sheep Scab Offences.—That farmers should avail themselves of the free veterinary service of the Ministry of Agriculture in order to control and eradicate sheep scab, was stressed by Mr. E. D. Jenkins, Barmouth, Ministry of Agriculture veterinary inspector, when giving evidence in two cases at Penrhyndeudraeth police court.

Richard Morgan Davies, age 34, of Hafodwern, Penrhyndeudraeth, and Richard Jones, age 68, of Ynysfawr, Penrhyndeudraeth, were charged with failing to report sheep scab with all practical speed. For the prosecution, Mr. Jenkins stated that he inspected a flock of sheep in Davies's premises, and found that out of 104 sheep 64 were affected with scab. He was of the opinion that they had been affected for six to nine months. In Jones's flock of 48 sheep, 14 were affected with scab.

The defendants, who were fined £3 each and ordered to pay costs, said that they thought the sheep had lost their wool from other causes, and that they were not aware of the Ministry's free veterinary service.

* * * * *

DEVELOPMENT IN THE COLONIES

Colonel Oliver Stanley, Secretary of State for the Colonies, gave his impressions of his recent informal visit to West and East Africa at the Royal Empire Society recently and emphasised the urgent need for social and economic development in the colonies as a step towards self-government. Lord Hailey presided.

There were, of course (said Colonel Stanley), tremendous differences existing inside the territories—differences in economics, politics, religion, culture, language, and other things. They were great, and it would be no good pretending they did not exist or that they did not create peculiar difficulties in the way of development. He did not regard them as obstacles but as challenges, and unless due weight was given to these differences self-government was bound to be an unjust and inequitable failure. In discussion of the future of the territories they should try to avoid over-emphasis on purely matters of machinery which tended to overlook the realities of self-government. Without proper social and economic development there would be only a mockery of self-government, and it was our urgent duty to see that the social and economic aspects were given their right place. Economically, the territories were largely agricultural and their greatest need would be agricultural development. One of the biggest problems would be to get the farmer himself, conservative in outlook, to adopt new methods, and in this education would be one of the fundamental requirements of the agricultural system.

He hoped that after the war the people of this country would continue to take greater interest in colonial problems than they had shown before the war, and would be prepared to shoulder greater financial responsibilities for the sake of colonial peoples. But there would be no real future for those people unless they were prepared to help themselves, for the assistance we could give must always be limited.

Among many less serious touches was Colonel Stanley's reference to the fact that, at Kano, in the municipal library, he had seen on the shelves a volume of Lord Hailey's "African Survey," which seemed by its appearance to have at least been more reverently, if not more frequently, handled than volumes on lighter matters. At one place where he had attended a chieftain's meeting he had noticed a body of men creating a great disturbance round the chief. These, he was told, were the official flatterers. He did not know what their equivalent was here—unless it was public relations officers.

CORRESPONDENCE

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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ARTIFICIAL INSEMINATION IN SHEEP BREEDING: EXPERIENCE IN AUSTRALIA

Sir,—Your issue of May 29th, 1943, contains note of a question in Parliament about artificial insemination of sheep: the Minister of Agriculture was asked if, in view of reported "great success" in Australia, he intended to urge its adoption as a means of increasing the "annual lamb yield" in Britain.

To my knowledge only two veterinarians have undertaken insemination of sheep on a commercial scale in Australia. From reports of my colleague's work, and from my experience, I should say that "great success" somewhat overstates the efficiency of the technique if it is thought of as a single means of increasing the annual lamb yield.

My experience has been only with merinos, and has not included induction of ovulation with hormones; I should say that results similar to those obtained by hand-mating may be expected.

The value of artificial insemination in sheep breeding lies chiefly in the increased scope it gives to the application of genetic principles in breeding plans. It would be bad for animal husbandry if its ultimate use in long range plans of breed improvement were endangered by disappointed expectations from its use in short range projects such as that referred to in your note.

Yours faithfully,

W. Granger,
Research Officer.

Haddon Rig Stud,
Warren, N.S.W., Australia.
November 3rd, 1943.

(A statement of results at Haddon Rig is given on page 13 of the advertisement section of the *Pastoral Review* of July, 1943.)

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"BOTH TESTES ABDOMINAL: A SIRING QUERY"

Sir,—It is, I believe, generally agreed that when both testicles are abdominal, no spermatozoa are formed and the male is infertile; the reason being that the temperature in the abdomen is unfavourable to their development.

W. L. Williams in an article entitled "The problem of teratology in clinical veterinary medicine" contributed to *The Cornell Veterinarian* (1936), vol. xxvi, p. 1, has described an example of a highly bred Guernsey bull of normal fertility, with testicles incompletely descended, apparently because of an abnormally high fixation of the gubernaculum testis, which led the upper end of the testicle to tilt forward, so that the scrotum hung obliquely downward and backward. He states that his "teats" were gigantic, approximately the size of those of a mature heifer. Commenting on this case in the second edition of his classic work on "Diseases of the Genital Organs of Animals" (1939. Ithaca), Williams reports that all his progeny of both sexes have gigantic teats, and all the males have tilted testicles.

Yours faithfully,

"Rothiemurchus,"
St. Cross, Winchester.
November 28th, 1943.

J. F. D. Tutt.

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GLASGOW VETERINARY COLLEGE

Sir,—As a graduate of Glasgow Veterinary College, it was with complete disgust that I read in *The Veterinary Record* of November 27th that the State grants to the College had been renewed, but only until such time as the whole veterinary course can be taken over by the University.

When the grants were withdrawn in 1925, it seemed that it would be impossible for the College to carry on. But the staff and students of that time were made of sterner stuff. The staff volunteered to give their services without remuneration, and the students organised all sorts of stunts to raise funds. The storm was weathered and since then the College has been able to keep its head above water without assistance from the State, and has produced its fair quota of graduates who are now successfully practising their profession in all parts of the world.

A Glasgow graduate would be the last person to say that veterinary education in Glasgow is ideal; but I am none the less proud of my College and its history, and strongly protest against its proposed absorption into the University. Apart from anything else, such action would constitute yet another threat to our jealously guarded "one-portal system."

Yours faithfully,

Kingston House, Sherborne.
November 30th, 1943.

Robert A. Brown.

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CHOICE OF THE VETERINARY PROFESSION

Sir,—As I am preparing a review of our profession, would some of your readers, students or recently qualified veterinary surgeons give me, through your columns or to my address, their *reason* for choosing the veterinary profession as a livelihood?

Yours faithfully,

Woodcote, Pound Hill, Crawley.
November 29th, 1943.

Malcolm Park.